

REMARKS

At the outset, Applicant appreciates the Examiner's thorough review and consideration of the application. The non-final Office Action of March 15, 2010 ("Office Action") has been received and its contents carefully noted. Claims 6, 7, 8, 10, and 13 have been cancelled. Claim 2 has been withdrawn. Claims 1-5, 9, 11-12, and 14-20 are pending.

Claim Amendments

Claim 1 has been amended. Claims 6, 7, 8, 10, and 13 have been cancelled and their limitations included in claim 1. Further, the new limitation "wherein the exchange apparatus rests on a portion of said containing means weighing it down with its weight and wherein the exchange apparatus is supported by the containing means without further links" was added. Support for this limitation can be found in paragraph 96 of the specification: "Said heat exchange apparatus 6 is advantageously rested on said containing means 10. By the term rested it is intended that the exchange means 6 rests on a portion of the containing means weighing it down with its weight, and is therefore supported by the same, without further links." Spec., ¶ 96. For at least this reason, no new matter has been added by this amendment.

As discussed below, Claims 5 and 15 have been amended in response to the Examiner's objections.

OBJECTIONS

The Examiner objected to claim 15 due to an informality. Because this claim has been amended, applicant respectfully requests withdrawal of this objection. The Examiner also objected to the drawings under 37 C.F.R. § 1.83(a), stating that the "shaking means" in claim 5 must be cancelled from the claim or included in the drawings. By the above amendment, this feature is cancelled from claim 5. As such, Applicant respectfully requests the withdrawal of this objection.

CLAIM REJECTIONS

- Rejections Under 35 U.S.C. § 112.

The Office Action rejected claims 12 and 14 as being indefinite under 35 U.S.C. § 112, second paragraph. By the above amendment to claims 1, 12, 11, and 14, claims 12 and 14 now depend upon claim 1. As such, the term "said collection tank" in claims 12 and 14 now refers to "the collection tank" in claim 1. For at least this reason, Applicant respectfully requests that this rejection be withdrawn.

- **Rejections Under 35 U.S.C. § 102(b) in View of Kropp, Denysenko, Wolowodiuk, and Bailey.**

The Office Action rejected claims 1 and 3-20 as anticipated by one or more of GB Pat. No. 1,099,742 ("Kropp") U.S. Pat. No. 5,219,150 ("Denysenko"), U.S. Pat. No. 3,895,873 ("Wolowodiuk") and U.S. Pat. No. 5,477,950 ("Bailey"). As noted above, claim 1 was amended to include the limitations of claims 6, 7, 8, 10, and 13 and an additional, new limitation requiring that the exchange apparatus rest on the containing means, weighing it down, such that the containing means supports the exchange apparatus without further links. In light of this amendment, Applicant respectfully requests the withdrawal of these rejections.

Amended claim 1 is patentable, at least, because the new claim limitations provide two advantages over the cited prior art: Easy removal and improved elasticity of the tube bundle. As noted in the specification, this limitation requires that the exchange apparatus be capable of very simple removal, such that no destructive cutting is required. Spec, ¶ 127. Because the "containing means supports the exchange apparatus without further links" the exchange unit can be removed simply by the removal of threaded connections. *Id.* at 127, 96. There are both economic and functional advantages to easy removal of the exchange apparatus; such as the considerable reduction of plant shut down times. *Id.* at 128.

The prior art does not disclose this easy removal. In Bailey, the only prior art reference cited as disclosing the elements of claims 7 and 8, the heat exchange unit cannot be extracted without multiple destructive cuts. For example, the roof in Bailey is molded around the upper bends of the coils such that any removal would require cutting the roof. Besides damaging the roof, this would damage the refractory layer 48 and heat insulating layer 50 that coat the roof. Replacing the layers and fixing the roof would be costly and time consuming. Further, the exchange unit in Bailey is fixed to the drum 17, which, by boiler tubes 16, is connected to a lower conduit. In stark contrast to the invention of amended claim 1, this complicated set up will not yield easy removal and may require more destructive cutting.

This new limitation also provides for a more elastic tube bundle that can be cleaned more effectively with shaking and hammering methods. In prior art heat exchange units, such as Bailey, the tubes are embedded in both the roof and the refractory and heat insulation layers covering the roof. This leads to a rigid connection between the tubes and the frame. As noted in the specification,

this rigid connection minimizes the amount of cleaning that can be achieved with shaking and hammering techniques. Spec. at 129, 130. The linking system of amended claim 1 allows for more elasticity in the tube bundle and therefore more effective cleaning. *Id.* at 131.

Amended claim 1 is also patentable, at least, because it contains the elements of claims 7 and 8 and Bailey does not disclose these elements. According to the Office Action, claim 8 was anticipated only by Bailey. The limitations of former claims 7 and 8 require that the collection tank be fluid tight relative to the second fluid and that the collection tank enclose the connection means. The combination of these two limitations mean that the connection means are contained in a fluid tight tank and do not come into contact with warm corrosive gases of the second fluid. This prolongs the life of the connection means and eliminates the connection means as source of dust that may fall on the bundles. Spec. at 137. In Bailey, by contrast, the connection means are not all enclosed in a sealed collection tank. For example, elements 42 and 34 are below the tank and, in fact, the only segment of the connection means that is within a sealed tank is beam member 30. Thus, Bailey does not disclose the combination of these claim limitations.

Claims 3-29, which depend upon amended claim 1, are patentable for, at least, the reasons discussed above with respect to amended claim 1. For at least these reasons, Applicant respectfully requests the withdrawal of these rejections of claims 1 and 3-20.

- **Rejections Under 35 U.S.C. § 103(b) in View of Kropp, Denysenko, Wolowodiuk, Bailey and U.S. Pat. No. 3,581,813 ("Bell").**

The Office Action rejected claim 19 as being obvious in view of Kropp, Denysenko, Wolowodiuk, Bailey and U.S. Pat. No. 3,581,813 ("Bell"). Claim 19, which depends upon amended claim 1, is patentable for, at least, the reasons discussed above with respect to amended claim 1. Thus, Applicant respectfully requests the withdrawal of this rejection.

CONCLUSION

In view of the foregoing, Applicant respectfully requests a timely allowance of the pending claims. If there are any fees (such as necessary extension of time or extra claims fees) due in connection with the filing of this Response that are not covered by the concurrently submitted transmittal document, please charge any necessary fees or credit any overpayments to Deposit Account No. 50-1349. The Examiner is invited to contact Applicants' undersigned attorneys and agents by telephone to discuss any matters if the Examiner feels such discussions may expedite the progress of the present application toward allowance.

Respectfully submitted,

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